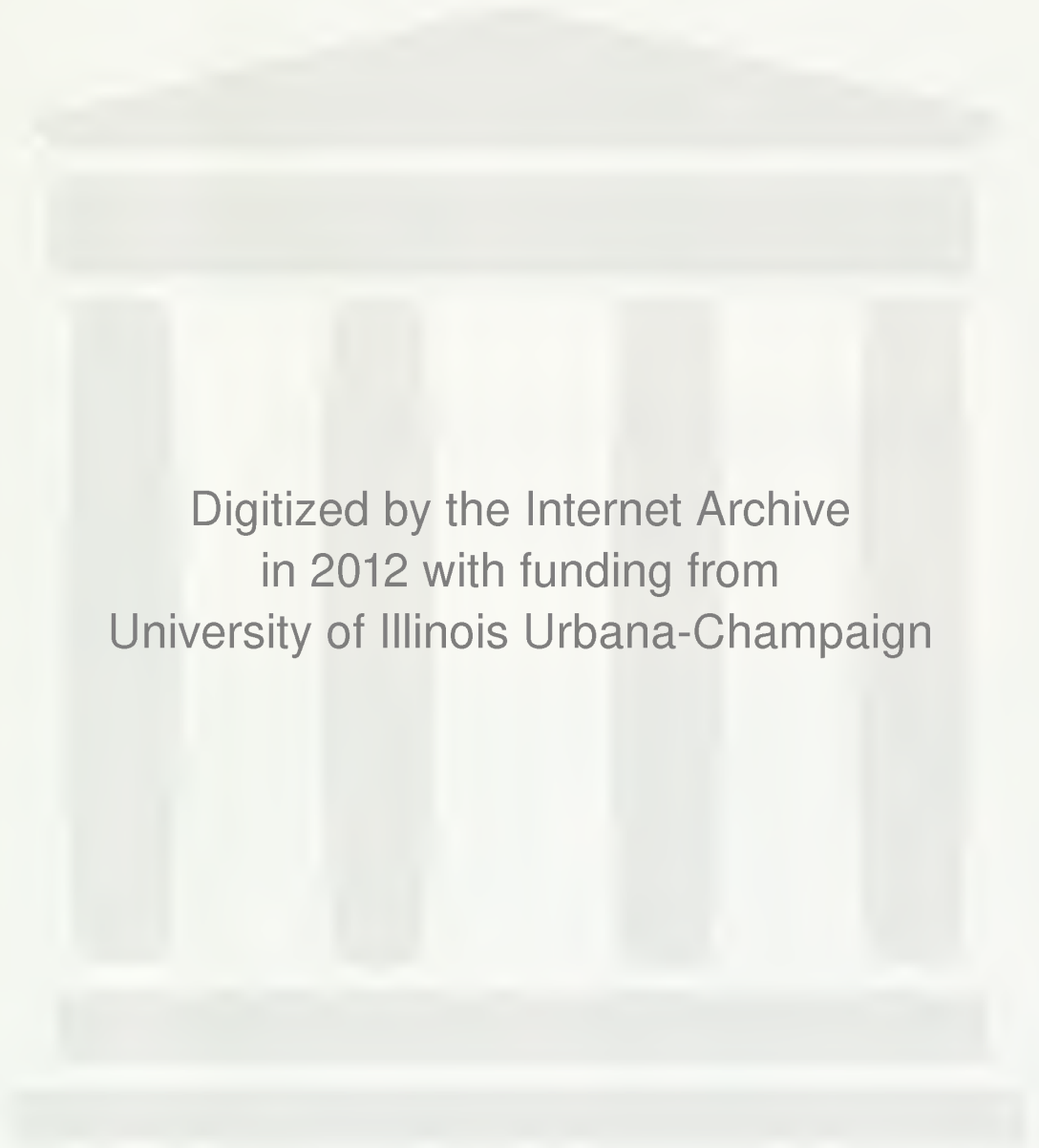

Faculty Working Papers

ROLE OF DEMOGRAPHICS IN CONSUMER BEHAVIOR

Jagdish N. Sheth

#218

College of Commerce and Business Administration
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In recent years, several researchers have expressed their skepticism about the role of socio-economic-demographic (SED) factors as determinants or even correlates of consumption behavior of people (Frank, Massy and Boyd, 1967; Frank, 1968; Yankelovich, 1964; Wells and Tigert, 1971). The skepticism ranges from the lack of relevance of SED factors in affluent mass consumption societies to obtaining poor predictions of brand choice behavior with the use of SED factors. The purpose of this paper is to critically examine major types of criticisms that have been raised against the SED factors, and in process, to assess the role of SED factors in consumer behavior.

Such an assessment of SED factors seems essential to the consumer behavior researcher who faces the following dilemma: On the one hand, socio-economic-demographic variables seem highly desirable and often necessary in marketing and public policy decisions. The SED factors are easier to collect, easier to communicate to others and often more reliable in measurement than many of the competing factors including personality, life styles or psychographics. Furthermore, only through SED factors is the researcher able to project his study results to the country's population because the Bureau of the Census collects and updates only the socio-economic-demographic profiles of the country. Finally, often the regulation and public policy issues focus on the socio-economic-demographic segments of the society and critically assess the adverse impact of marketing communications on these segments. For example, public policy issues are often concerned with children, Senior Citizens, Blacks, women or poor people. On the other hand, the researcher also finds a number of arguments against their use in consumer behavior; (1) SED

factors are traditional, old-fashioned and obsolete ways of looking at differences in consumption behavior of people and as bases for segmentation; (ii) Generally they tend to be poor correlates of consumption behavior; (iii) they cannot be controlled, manipulated or changed by the decision-maker making him more passive in his role as manager of consumption behavior in the market place, and (iv) they are borrowed from other disciplines such as economics and sociology whose perspective on consumer behavior may not be appropriate or even relevant.

In light of this dilemma, let us carefully examine some of the criticisms levied against the SED factors. Briefly, these criticisms can be categorized into four types: (i) Dissatisfaction with theories and models of consumption behavior developed by economists and sociologists with the use of socio-economic-demographic factors; (ii) Presumed obsolescence of SED factors as determinants of consumption behavior in highly affluent industrial states; (iii) Poor predictions with SED factors in empirical research in consumer behavior especially with respect to brand choice and brand loyalty behaviors of people; (iv)"Grass is greener on the other side of the fence" attitude among marketing researchers which has resulted in search for, and utilization of, other factors as substitute determinants of consumption behavior.

Dissatisfaction With Models in Economics and Sociology

One of the major reasons for the decline of SED factors in consumer behavior can be directly attributed to the consistent failure of the models of consumption behavior developed in economics and sociology based on SED factors (Katona 1951, Simon 1959; Howard 1965). In economics, the examples of consumption models based on SED variables are (a) numerous theoretical models of income effects on consumption

behavior based on marginal utility analysis including the absolute, the real, the permanent, the disposable, and finally the discretionary income hypotheses (Ferber 1962, Burk 1968); (b) numerous econometric models, both in time series and in cross sectional analysis, in which economic growth of a product, industry, or the nation are treated as direct functions of demographic and economic variables associated with the populations. (Prais and Houthakker 1955; Orcutt, et.al. 1961). Examples of the sociology models based on SED variables include: (a) numerous formulations and reformulations of social stratification based on income, education and occupation variables (Maxwell 1965, Pfautz 1953, Warner, Meeker and Eels 1949, Martineau 1958) (b) models of life styles based on life cycle and occupational analysis (Hodge, Siegel and Rossi, 1966) and models of conspicuous consumption and other irrational behaviors based on peer group influences and lack of education (Fallers 1954; Caplowitz 1963; Levy 1966; Likert 1956).

It is unfortunate that failures of these models in economics and sociology to satisfactorily explain or predict consumer behavior has been generalized by marketers and researchers as the failure of socio-economic-demographic factors. A number of compelling reasons, however, suggest that discarding SED factors in the process of rejecting models of consumption behavior from economics and sociology may be tantamount to throwing the baby out with the bath water.

First of all it should be noted that sociologists and economists are not as unhappy with these models as we are in marketing. This is because in marketing we have liberalized these models and extended them to predicting and explaining brand choice behavior although the models are developed with the explicit objective of explaining and predicting differences in consumption at the broad product class levels. In other words, while these economic and sociology models have failed at

the brand level they may not have necessarily failed at the product class level. There is considerable evidence to back up this reason in the consumption behavior of durable appliances, automobiles and housing buying behavior (Clark 1954, 1955).

Secondly, due to high degree of specialization in more advanced disciplines, often the models are explicitly developed as partial explanations of a phenomenon. This has been very true of a number of models of consumption behavior in economics and sociology. Unfortunately, when these models are borrowed by other disciplines they are often misconstrued as full explanations of consumption behavior. Consequently, when their predictive or explanatory power is less than spectacular, researchers tend to get disenchanted with them due to extremely high expectations. It seems logical then to think that a better strategy than discarding these models is to consider them as one piece of a more complex puzzle: you cannot solve the puzzle with that piece alone nor can you afford to discard it as puzzle may remain a puzzle without it.

Third, it is true that economists and "sociologists" tend to be academic evangelists who prefer to formally build models of consumption behavior which are often normative and relevant to policy planners as desirable or ideal models of human behavior in regard to matters of consumption. As normative idealistic models of desired behavior, often these models tend to make some fundamental assumptions of consumption realities which are unwarranted and proven to the contrary. The models, when tested with real data, often do not work resulting in disillusion on the part of the users of these models. For example, most economic models of income presume a monotonic relationship between income and a number of consumption indicators such as price paid for the product, looking for sale or deal, or

purchasing nationally advertised products versus private label (store) brands. Most studies in marketing fail to relate income with indicators of consumption behavior with the use of formal economic models. The linear correlations tend to be low and the researcher often discards income as a useful predictor of consumer behavior. However, increasingly it is shown that there is a systematic strong relationship between income and consumption behavior but it is nonmonotonic: both low and upper income people tend to behave the same way and opposite of the middle income people. This is, of course, contrary to normative formal thinking of economics and sociology. The point is that income is a useful SED variable even though the specific models built in economics and sociology may not be correct.

The above reasons clearly suggest that it is premature to discard SED factors in consumer behavior because of dissatisfaction with economic and sociological models of consumption behavior.

Obsolescence of SED Factors in Mass Consumption Societies

A second major reason for the decline of SED factors in consumer behavior can be attributed to the narrowing differences in income, education and occupational status variables in affluent societies, and the emergence of the large middle class which tends to minimize class differences. Sweden is often cited as an example where class differences are minimum and general affluence is unprecedented, and therefore, the SED factors are obsolete. In short, many researchers believe that while SED factors were highly relevant at the turn of the century or even upto World War II, they have become obsolete in the late forties, fifties and sixties due to unprecedented economic growth. They also agree that SED factors may be still

highly relevant in underdeveloped economies but, at the same time, insist that explanation for consumption differences in mass consumption societies lies elsewhere.

Once again, it is unfortunate that we tend to generalize too quickly. While it maybe true that income and class effects have narrowed in recent years, it should be remembered that SED factors include many other variables whose effects are less subject to change due to environmental dynamics. Examples of these types of SED variables are sex, age, race, religion and other factors which are ascribed or biogenic in nature. There are still dramatic differences in the consumption behaviors of different segments of society based on sex, age, race and religion. For example, lipstick is still primarily consumed by women, older people tend not to listen to Rock music, per capita consumption of liquor is three times higher among Blacks than among Whites, and Catholics still tend to use contraceptives much less than the rest of the population (See Engel, Kollat & Black 1973, for example). In short, despite economic affluence, sex, age, race and religion differences in consumption behavior are very real whether we like it or not. In fact, often one gets the feeling that sex, religion, race and age differences may be more obvious and capitalized upon in marketing now that income and class differences have narrowed down. This seems to be the underlying marketing strategy of those industries which believe in artificial product differentiation by packaging and promotion appeals such as the cigarettes, the beer and the soft drinks industries.

Even with respect to income, education and occupation factors there is still a debate as to whether the differences among people have narrowed down to such an extent as to make them obsolete as predictors of consumption differences. There is considerable evidence to show that group differences among different categories of

income, education and occupation are substantial and statistically significant despite a good deal of within group differences (Bass, Tigert and Lonsdale, 1968).

In summary, it seems that a vast majority of SED factors based on race, sex, religion and creed are still useful predictors or correlates of consumption behavior in affluent mass consumption societies although the usefulness of income, education and occupation has lessened in recent years.

Poor Predictions With SED Factors

A third major reason for the decline in popularity of SED factors in consumer behavior and marketing is a rather impressive and extensive list of empirical studies in market research especially on grocery products which reveals poor performance on the part of socioeconomic-demographic variables in explaining differences in brand loyalty, deal proneness or consumption patterns (Frank 1968; Frank, Massy and Boyd, 1967; Frank, Massy and Lodhal 1968). Most of these studies show that the linear multiple correlation between SED variables and any aspect of consumer behavior is usually between 0.20 to 0.40 explaining about 10 to 15 percent of total variance in consumption behavior. These studies have probably contributed more toward the decline of demographics in consumer behavior than any of the other factors because in an infant discipline including consumer behavior and marketing, researchers tend to rely heavily upon inductive empirical research findings as the sole guide in search for explanations of the phenomenon.

There are, however, at least five reasons which warrant further research before one can discard demographics as useful predictors of consumer behavior in order that the baby is not thrown out with the bath water. First, should we really generalize

poor correlations found in grocery products at the very micro level of brand choice or store choice behavior to other product categories and at more macro aspects of consumer behavior? It seems highly unlikely that the demographic factors of industrial customers such as size of the organization, number of locations, capitalization and diversification will also have poor correlations with supplier choice behavior in industrial markets. Similarly, it seems also unlikely that consumption behavior of durable goods such as homes, automobiles and appliances will also have low correlations with household demographics including income, education and occupation. In fact, the evidence seems to be the opposite. Even in regard to grocery products, it would appear, and there is some evidence in agricultural marketing to suggest that SED factors have strong correlations with product consumption behavior (Burk 1968). Once again, it would appear that we might have been too quick in discarding socio-economic-demographic factors as correlates or predictors of consumer behavior.

Second, there is a real question whether linear correlation analysis is an appropriate statistical method for judging the relevance of SED factors in marketing. The linear correlation analysis has the objective of explaining individual differences when a sample of consumers are utilized as observations. It is very likely that the linear correlations tend to be lower in such an analysis due to two statistical problems: (i) within-category differences in consumption may be substantial and different from category to category even though between-category differences may be significant; (ii) problem of heterogeneity created by aggregating different types of customers with opposing tendencies due to different habits, curiosity, and psychological beliefs about the product. As Bass, Tigert and

and Lonsdale (1968) have suggested, demographics are often used for market segmentation purposes in marketing where the interest of the manager is in significant group differences and not in individual differences.

Third, and probably the most important reason in not putting complete faith in empirical findings which show poor correlations between demographics and consumption behavior is the fact that often the low correlations are produced due to an extremely high skewness of residuals in a small percentage of the total sample. It is not unusual in household analysis of consumption behavior to find that five to ten percent of the total sample retains forty to sixty percent of unexplained variance (Roscoe and Sheth 1972). This skewness in residuals clearly suggests that the low correlations often arise due to aggregation of a small percentage of consumers whose behavior is not modelable i.e. their behavior is random or at best stochastic, and a vast percentage of consumers whose behavior is modelable with the use of demographic factors. Perhaps it is better to identify and discard nonmodelable people from the sample before attempting any correlation analysis between demographics and consumer behavior. It is very likely that the correlations will improve considerably revealing true relationship between demographics and consumption behavior at the individual level.

Fourth, linear correlation analysis imposes serious assumptions of linearity and additivity on the relationship among variables. A number of studies have concluded that in social sciences both the linearity and additivity assumptions are often not warranted or borne out by the reality (Morgan and Sonquist, 1963). In marketing, several studies have demonstrated significant improvement in the strength of relationship between demographic variables and customer behavior, both at the

micro and macro level of analysis, when nonmonotonic and interactive aspects were explicitly incorporated in the analysis (Roscoe and Sheth 1972; Armstrong and Andress 1971; Frank 1969).

Fifth and the final explanation for poor correlations between demographics and consumption behavior relates to the problem of scaling both the predictor and the criterion variables. Several researchers have suggested that improper measurement and scaling of demographic variables such as income, occupation and age often dramatically lowers correlations. Similarly, it is often found that the correlations with the same demographic variables change significantly with different measures of the criterion variable. Added to this problem of measurement and scaling, some researchers have suggested that single indicators of the more fundamental demographic constructs also creates problems: we need indices of socio-economic-demographic factors which are properly built with good psychometric procedures.

In short, it is premature to discard socio-economic-demographic factors based on poor correlations found in several studies of consumption behavior with respect to grocery products.

Grass is Greener Thinking

In a growing discipline, it is not uncommon for researchers to put forward several competing and sometimes inconsistent explanations for the same phenomenon. Furthermore, often the competing viewpoints have been commercially exploited in marketing research by consultants in order to make a quick buck. It is, therefore, not surprising to see that we have fads and fashions in market and consumer behavior research. Several competing viewpoints have been expressed as alternative to demographics in marketing research especially in the area of segmentation

analysis. The major types of these competing viewpoints or explanations are personality profiles, life styles and attitude or psychographics.

A review of personality research in consumer behavior (Sheth 1967; Kassarjian 1973) reveals that correlations of personality traits with consumption behavior also tend to be fairly low. While the correlations of life styles with consumption behavior tend to be somewhat better (Wells and Tigert 1971), the results are not worth bragging about. Finally, a lot of interest in psychographic or attitude research also suggest only partial explanations of consumer behavior (Sheth 1974). In short, many of the alternatives proposed in the literature have also not produced spectacular results to warrant discarding of demographics.

Conclusions

Based on a critical analysis some of the major arguments put forward for the demise of demographics in consumer behavior, it seems inevitable to conclude that discarding demographic variables is premature at best. Since none of the other alternatives by themselves fully explain consumption behavior especially at the micro level of individual's or household's brand choice behavior, it seems best to take a hollistic attitude and integrate demographic, psychographic, life style and personality variables by a more global theory such as the Howard-Sheth (1969) theory of buyer behavior.

Secondly, whether we like it or not, demographics are here to stay with us for projection, identification and segmentation of the markets so long as the census data of the countries are limited to socio-economic-demographic profile of the citizens. Since it is unlikely that the Bureau of the Census will collect life styles and personality profiles of citizens in the near future, it seems inevitable to link other factors to demographics even if they are more relevant in consumer behavior.

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